

WHAT IS CLAIMED IS:

1. A thin film structure, comprising:
 - a first layer including at least one of Cu, Au, Ag, Al or copper alloys;
 - a second layer adjacent said first layer, said second layer including a metal oxide; and
 - a third layer adjacent said second layer, said third layer including a magnetic material.
2. The thin film structure of claim 1, wherein said third layer is a recording layer comprising Co/Pd, Co/Pt, CoX/PdY, or CoX/PtY multilayer structures, wherein X is Cr, B, Si, Au, Ag or combinations thereof and Y is B, Si, or combinations thereof.
3. The thin film structure of claim 1, wherein said third layer is a multi-layer structure having means for magnetic data storage or magneto-optical data storage.
4. The thin film structure of claim 1, wherein said third layer includes means for perpendicularly recording data.
5. The thin film structure of claim 1, further comprising a soft magnetic layer, said first layer formed adjacent said soft magnetic layer.
6. The thin film structure of claim 1, wherein said first layer has a thickness in the range of about 2 nm to about 200 nm.
7. The thin film structure of claim 1, wherein said second layer comprises ITO or ITO-Zn.
8. The thin film structure of claim 1, wherein said second layer has a thickness in the range of about 0.5 nm to about 5.0 nm.
9. A recording medium, comprising:
 - a recording layer; and
 - a dual layer seed layer, comprising:
 - a first layer including at least one of Cu, Au, Ag, Al or copper alloys; and
 - a second layer formed between said recording layer and said first layer, said second layer comprising a metal oxide.
10. The recording medium of claim 9, further comprising a soft magnetic underlayer, said dual layer seed layer formed on the soft magnetic underlayer.

11. The recording medium of claim 9, wherein said second layer comprises ITO or ITO-Zn.

12. The recording medium of claim 9, wherein said first layer has a thickness in the range of about 2 nm to about 200 nm.

13. The recording medium of claim 9, wherein said second layer has a thickness in the range of about 0.5 nm to about 5.0 nm.

14. The recording medium of claim 9, wherein said recording layer comprises Co/Pd, Co/Pt, CoX/PdY, or CoX/PtY multilayer structures, wherein X is Cr, B, Si, Au, Ag or combinations thereof and Y is B, Si, or combinations thereof.

15. The recording medium of claim 9, wherein said recording layer is a multi-layer structure.

16. The recording medium of claim 9, wherein said recording layer is a perpendicular magnetic recording layer.

17. A magnetic disc drive storage system, comprising:
a perpendicular magnetic recording head; and
a perpendicular magnetic recording medium positioned adjacent said perpendicular magnetic recording head, said perpendicular magnetic recording medium comprising a hard magnetic recording layer, a soft magnetic underlayer and an intermediate layer between said hard magnetic recording layer and said soft magnetic underlayer, said intermediate layer comprising:

a first layer comprising Cu, Au, Ag, Al or copper alloys; and
a second layer comprising a metal oxide material that is formed between said hard magnetic recording layer and said first layer.

18. The system of claim 17, wherein said intermediate layer has a thickness in the range of about 2.5 nm to about 205 nm.

19. The system of claim 17, wherein said first layer has a thickness in the range of about 2 nm to about 200 nm.

20. The system of claim 17, wherein said perpendicular magnetic recording head has an air bearing surface, a distance between said air bearing surface and said soft magnetic underlayer being in the range of about 50 nm to about 500 nm.

21. The system of claim 17, wherein said second layer comprises ITO or ITO-Zn.